

### ABSTRACT

The present invention provides 2-heterosubstituted 3-aryl-4H-benzopyran-4-one compounds for the treatment of cancers, namely breast cancer. This invention further provides a method of synthesis of 2-(alkylthio)isoflavones that can be carried out at ambient conditions. This invention further provides a method of synthesis of the 2-heterosubstituted 3-aryl-4H-benzopyran-4-one from a 2-(alkylthio)isoflavone. The invention further provides methods of using the 2-heterosubstituted 3-aryl-4H-benzopyran-4-one compounds for the treatment of breast cancer in mammals.